equal volumes of distilled water. He calls attention to the fact that schoolmasters who spend their working hours in rooms in which the air is very much vitiated by respiration have a much lower comparative mortality figure than lawyers, physicians, and farm laborers, and that their comparative mortality figure for phthisis and other respiratory diseases is even lower in proportion than the general death rate. But schoolmasters are associated with children, who are very little subject to phthisis, which is more a disease of middle age, and hence there is not the danger of infection which comes to those associated in crowded rooms with adult workers. Since the danger of infection by virulent bacilli is much greater in rooms occupied by spitting consumptives, a far higher standard of ventilation is required for such places.

In place of the legal limit of 9 volumes of carbon dioxide in 10,000 of air, fixed several years ago for cotton factories only, where the air needs to be humidified, a departmental committee, consisting of Haldane and Osborn, of the Home Office, recommended, in 1902, that one of 12 volumes for daytime and 20 for night, when gas is burning, be established for workshops generally, in the belief that great improvement would thereby be effected. This recommendation was vigorously objected to, on the ground that the proposed standard was much too lax and would render nugatory all attempts to secure efficient ventilation. Haldane insists, however, that it is impracticable to make no allowance for burning gas, for, although the products of combustion can doubtless be removed by systems of ventilating pipes, such are practically never used in factories and workshops, and would be extremely troublesome and costly; and he can call to mind no gas-lighted factory, however well ventilated, where a standard of 9 volumes can be maintained after dark in winter. An ordinary gas flame consumes five times as much oxygen and produces about three times as much carbon dioxide as an adult man; and hence a maximum standard of 20 volumes of carbon dioxide per 10,000 of air after dark appears to be reasonable. The air of elementary schools appears to be fully twice as bad as that of factories; and he recommends that if a 12-volume standard be enforced in factories, it be enforced also in schools, in spite of the necessary and very considerable expense involved.

[Anybody who has had considerable experience in the examination of school-room air knows that, in spite of all attempts to keep impurities down, the carbon dioxide is commonly far more abundant than Haldane's proposed standard would permit, especially in old buildings. Repeated examination by the writer of the air of a number of old schoolhouses at different seasons of the year yielded averages which more often reached 30 than 12 per 10,000.—C. H.]

Milk and Disease.—*Typhoid Fever.* An outbreak of typhoid fever among factory hands, the cause of which was traced to milk, is described by DR. W. R. STOKES (*Journal of the American Medical Association*, February 25, 1905). The number of persons employed included 1500 girls and women and 400 men. The former were served with a light luncheon, which included a glass of milk, but the latter went out to neighboring places where beer could be procured. The outbreak was confined almost exclusively to the women, of whom there were as many as 200 absent at one time, but the manager believed that many were away from causes other than sickness. The milk supplied came from a dairy where there was no history of typhoid, but bacteriological examination revealed the presence of 4,500,000 bacteria per cubic centimetre, and colon bacilli in $\frac{1}{1000}$ cubic centimetre samples. The well, which was not protected from surface drainage, was distant about fifty feet from the privy, the box of which was full of liquid fecal matter, and close to the place where the milk was cooled. Many flies were observed about the box, and they had free access to the milk-room. The well-water contained bacillus coli and 6000 bacteria per cubic centimetre, and the ice yielded bacillus coli in 1 c.c. samples and 5000 bacteria per cubic centimetre. The milk supply was cut off, and the outbreak came to an end.

Septic Sore Throat. During October and November, 1903, about 250 cases of septic sore throat occurred in the Station Ward of Woking and in a district adjacent thereto. They were fairly well distributed over the ward, and inquiry by Dr. R. W. C. Pierce (*Journal of State Medicine*, October, 1904, p. 595) into their cause led to the suspicion that they were due to milk from a farm which was the common source of supply to two dealers, who, it transpired, had complained to the farmer of the ropy character of his product. The twenty cows appeared to be healthy, but four were found to have garget, their milk containing much pus and an abundance of streptococci. The supply was shut off after November 14th, and the outbreak ceased. The farmer himself had had a severe sore throat about the middle of September, and his wife, two sons, and two daughters had been similarly afflicted during October. The majority of persons affected were adults, and among these there were eight deaths attributed to the infected milk. In many instances whole families were seized, and in one house twelve of the thirteen inmates were victims. In a number of houses invaded the succession of cases suggested the probability of contact infected. The lesions varied in character and extent. Many were indistinguishable from ordinary cases of follicular tonsillitis; others were suggestive of diphtheria, and others developed into quinsy. Usually there was considerable constitutional disturbance, and a marked tendency to involvement of the submaxillary and posterior cervical glands, which remained enlarged for a considerable length of time. The lesions were not always confined to the tonsils; in some cases the pharynx and larynx were involved, making deglutition exceedingly painful and difficult. One patient, with his nasopharynx covered with a sloughing membrane, was sent to the hospital and died in about a week of pyæmia, with a post-mortem temperature of 110°. His wife was confined about the same time and developed puerperal fever, and two of his children had sore throat. Numerous victims had pain and tenderness of the joints, following the throat symptoms in from three to seven days. In five instances very severe erysipelas followed the throat symptoms, and one of these patients developed a mastoid abscess and died in about ten days from the onset.

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